ATTACHMENT J4

Scott AFB Wastewater System

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J4.1 Scott AFB Overview

Scott AFB is located in Belleville, Illinois, approximately 25 miles east of St. Louis, Missouri, in St. Clair County. During World War I the area, then named Scott Field, served as a training base. In June 1923 the state of Illinois ceded approximately 1,884 acres to the United States for military purposes and in 1947, Scott Field was re-designated Scott Air Force Base. In July 1955, the State of Illinois ceded more land to the Federal Government for military use. Today Scott AFB comprises 3,589 acres and has approximately 13,100 military and civilian personnel.

Scott AFB is home to the 375th Airlift Wing (AW), the 932nd Airlift Wing Air Reserve Station, and the 126th Air Refueling Wing (ARW) Illinois Air National Guard. The 375th AW serves as the host to the organizations on Scott AFB. The 375th AW is responsible for managing a domestic aeromedical evacuation system, providing initial qualification training for C-9A and C-21A pilots, and operating Scott AFB. The 375th AW commands 50 active-duty C-21A flying units located throughout the United States, including 8 assigned to Scott AFB.

The 932nd AW provides C-9A aeromedical evacuation aircrew and maintenance for the C-9A aircraft. The 932nd AW partners with the 375th AW on approximately 47% of the daily aeromedical evacuation missions.

The 126th ARW is the newest addition to Scott AFB, coming from Chicago O'Hare International Airport in 1999. The 126th ARW provides aerial in flight refueling and carries out airlift missions through its assigned 11 KC-135E Stratotankers.

As the host unit at Scott AFB, the 375th Airlift Wing supports 24 other on-base units including 4 headquarters with worldwide responsibilities:

- United States Transportation Command (USTRANSCOM).
- Air Mobility Command (HQ AMC)
- Air Force Communication Agency.
- Defense Information Technology Contracting Office (DITCO).

Scott AFB encompasses approximately 975 buildings with 57 administrative, 4 dorms, 1430 housing units, and 171 industrial buildings. The economic impact of the Base on the surrounding area is $1.632 billion.

J4.2 Wastewater System Description

J4.2.1 Wastewater System Fixed Equipment Inventory

The Scott wastewater system consists of all appurtenances physically connected to the collection system from the point of demarcation defined by the Right of Way. The system may include, but is not limited to, pipelines, manholes, lift stations, valves, controls, treatment plants, and meters. The actual inventory of items sold will be in the bill of sale at the time the system is transferred. The following description and inventory is included to provide the Contractor with a general understanding of the size and configuration of the system.

Specifically excluded from the wastewater system privatization are:

- Wastewater collection systems in Patriots Landing, Shiloh Housing, and Galaxy Housing
- Storm Sewers
- Oil Water Separators
- Grease traps
- Septic systems

J4.2.1.1 Description

The wastewater utility system at Scott AFB provides wastewater collection, onsite treatment, and disposal of treated wastewater and sludge for base facilities and housing areas. Patriots Landing, Shiloh Housing, and Galaxy Housing wastewater collection systems are being privatized under the Housing Privatization initiative, however the wastewater flow from these areas will continue to discharge to the base wastewater treatment plant (WWTP). The Main Base wastewater collection system was originally constructed of vitrified clay pipe and asbestos cement. Replacements and additions have introduced PVC, ductile iron, and cast iron without cathodic protection or tracer wire to the system. The depth of pipe is estimated at 1 to 10 feet below the ground surface, although the actual depth of pipe may vary. The Main Base collection system utilizes eleven lift stations, force main piping, and gravity pipe to transport the wastewater to the WWTP.

Scott AFB provides onsite wastewater treatment through its 3.0 mgd WWTP. The WWTP has a design average flow capacity of 2.0 mgd and a design maximum flow capacity of 3.0 mgd. The treatment process includes mechanical screening, grit removal, primary clarifiers, trickling filters, final clarifiers, tertiary sand filter, chlorine contact, and dechlorination. Sludge is currently placed in anaerobic digesters and shipped offsite for land application. A belt filter press is available for sludge dewatering if landfill disposal becomes necessary. Other facilities included with the WWTP are the control room building which houses offices and a laboratory, a 200 kilowatt (kW) diesel emergency generator, an effluent pump station, and a storage building.

The Scott AFB WWTP was originally constructed in 1940. The design consisted of a sedimentation tank, trickling filter, clarification tank, digester, and two six unit sludge

drying beds. In 1942 the plant expanded its capacity by doubling its equipment and operating in parallel. A second story was added to Building 3290 in 1956. In 1970 a tertiary sand filter with automatic backwash was added to the system.

Major replacements and additions to the system took place in 1988. New inlet works, primary clarifiers, a blower building, an administrative building, an effluent weir tank, plant service water system, and a sludge dewatering building were added. The final clarification tanks, trickling filters, digester, and remaining sludge beds were rehabilitated.

In the 1990s a dechlorination tank and sulfonation building were added, the inlet works were enclosed, and an excess flow chlorine contact tank was added to handle flows exceeding 2.0 million gallons per day (MGD). In 1995, the trickling filter No. 2 was covered with a metal roof, and the digesters were rehabilitated. In 2004, the trickling filters, WWTP inlet works, and the sand filter bridge are being rehabilitated.

Scott AFB's discharges treated wastewater through four permitted outfalls (001, 002, 003, and Outfall A01) in accordance with Illinois Environmental Protection Agency permit No. IL0026859. The WWTP discharges continuously through Outfall 001 into an unnamed tributary of a local stream. A non-potable water pipeline transfers treated wastewater from the dechlorination tank to the golf course pond and Scott Lake II on an as needed basis. Outfall 002 is the point of discharge from the golf course pond. Outfall 003 is the point of discharge from Scott Lake II. Outfall A01 is a sampling point within the treatment plant. Water flows through Outfall A01 during events when plant capacity is exceeded. Excess flow bypasses the treatment processes, receives a dose of chlorine, and is sampled at A01 before being discharged through Outfall 001.

During the spring, summer, and fall months the treated wastewater is used to fill the golf course pond and the pond water is subsequently used to irrigate the golf course when needed. Currently, the golf course staff watch the level in the pond and call the WWTP to request flow diversion before irrigation demands drain the pond. The golf course staff is responsible for operating the irrigation pumps and for general maintenance on the pond, including cleanout. The WWTP operators are responsible for operating and maintaining the transfer pump and two miles of pipe leading to the pond. An overflow weir from the golf course pond (Outfall 002) discharges through a pipe into an unnamed tributary of a local stream. The golf course staff monitor the lake levels so that they do not overflow.

Water is diverted to the third discharge location, Scott Lake II, by manually turning a valve in the two mile pipe. Overflow from Scott Lake II flows over Outfall 003 and then through a pipe into an unnamed tributary of a local stream. The two mile non-potable water pipeline delivering water to the pond is located approximately one foot below grade, therefore, it is necessary to drain the line each winter to prevent freezing.

Throughout periods of heavy rainfall, flow to the WWTP may exceed the plants capacity of 3.0 mgd. During this time, wastewater is diverted to the chlorine contact chamber then through Outfall A01 before discharge. The excessive flows appear to be caused by infiltration and inflow. The base is currently conducting an infiltration study to identify pipes and manholes that require repair.

The WWTP is located within the airfield clear zone near the southern end of the runway. Air Force Instruction 32-7063, Air Installation Compatible Use Zone (AICUZ) Program, limit the type of land uses within the airfield clear zone to the extent that future expansion and some types of repairs may be prevented. The Air Force is considering options on how to manage and arrange for the treatment of future wastewater produced by the base.

An environmental baseline study (EBS) has been completed for a portion of the WWTP. A copy of the EBS is available for review in the Technical Library.

J4.2.1.2 Inventory

Table 1 provides a general listing of the major wastewater system fixed assets for the Scott AFB wastewater system included in the sale.

TABLE 1
Fixed Inventory
Wastewater Utility System Scott AFB

Component	Size (in)	Quant.	Unit	Approximate Year of Construction
MAIN BASE				
Piping				
Vitrified Clay				
	6	3900	LF	1951
	6	3800	LF	1960
	8	1600	LF	1940
	8	13000	LF	1950
	8	20280	LF	1960
	10	700	LF	1940
	10	2340	LF	1951
	10	9100	LF	1960
	12	1160	LF	1940
	12	200	LF	1950
	12	6240	LF	1960
	15	2200	LF	1960
	18	1000	LF	1960
Asbestos Cement				
	6	900	LF	1950
	10	1400	LF	1950

TABLE 1
Fixed Inventory
Wastewater Utility System Scott AFB

Component	Size (in)	Quant.	Unit	Approximate Year of Construction
PVC	6	400	LF	1988
	6	1600	LF	1998
	8	2700	LF	1980
	8	1800	LF	1988
	8	1300	LF	1994
	8	1730	LF	1998
	10	2400	LF	1980
	10	1990	LF	1998
	12	540	LF	1998
	15	3800	LF	1988
	15	5680	LF	1998
	24	4400	LF	1988
	30	300	LF	1988
Ductile Iron				
	12	2600	LF	1950
	24	170	LF	1998
Brick Manholes	48 x 72	374	EA	1960
Precast Manholes	48 x 72	20	EA	1999
Lift Stations				
Lift Station 551 (CE Compound)				
Wet well	Medium	1	EA	1996
Pumps, piping, controls, electrical	Medium	1	EA	1996
Lift Station 857 (Vet Clinic)				
Wetwell	Medium	1	EA	1996
Pumps, piping, controls, electrical	Medium	1	EA	1996
Lift Station 1803 (Dining Facility)				
Wetwell	Medium	1	EA	1994

TABLE 1
Fixed Inventory
Wastewater Utility System Scott AFB

Component	Size (in)	Quant.	Unit	Approximate Year of Construction
Pumps, piping, controls, electrical	Medium	1	EA	1994
Lift Station 6399 (Fam Camp)				
Wetwell	Small	1	EA	1997
Pumps, piping, controls, electrical	Small	1	EA	1997
Lift Station 34408 (Trailer Park)				
Wetwell	Small	1	EA	1990
Pumps, piping, controls, electrical	Small	1	EA	1990
Backup Generator	7.5 Kw	1	EA	1990
Lift Station 3905 (Control Tower)				
Wetwell	Small	1	EA	2000
Pumps, piping, controls, electrical	Small	1	EA	2000
Lift Station 168 (Scott Club)				
Wetwell	Medium	1	EA	1994
Drywell	72 x 72 x 48	1	EA	1994
Building	Medium	1	EA	1960
Pumps, piping, controls, electrical	Medium	1	EA	1994
Backup Generator	7.5 kW	1	EA	1994
Lift Station 232 (Colonial Housing)				
Wetwell	Medium	1	EA	1996
Pumps, piping, controls, electrical	Medium	1	EA	1996
Lift Station 5040 (Air National Guard)				
Wetwell	Medium	1	EA	1999
Pumps, piping, controls, electrical	Medium	1	EA	1999
Lift Station 4015 (New Warehouse Area)				
Wetwell	Medium	1	EA	2004

TABLE 1
Fixed Inventory
Wastewater Utility System Scott AFB

Component	Size (in)	Quant.	Unit	Approximate Year of Construction
Pumps, piping, controls, electrical	Mediuml	1	EA	2004
Lift Station 1537 (Hospital)				
Wetwell	Small	1	EA	2004
Pumps, piping, controls, electrical	Small	1	EA	2004
Wastewater Treatment Plant - 3MGD				
3.0 MGD WWTP – Administration Buildings		1	EA	1970
3.0 MGD WWTP – (Concrete) Treatment Structures		1	EA	1980
3.0 MGD WWTP - Process Equipment		1	EA	2000
Treated effluent transfer line to Outfalls 002 and 003				
Ductile Iron	6	11,200	LF	1972

Notes:
EA= each
IN= inch
KW=kilowatt
LF= linear feet
MGD= million gallons per day
PVC = Polyvinyl Chloride
WWTP = wastewater treatment plant

J4.2.2 Wastewater System Non-Fixed Equipment and Specialized Tools

Table 2 lists other ancillary equipment (spare parts) and **Table 3** lists specialized vehicles and tools included in the purchase. Offerors shall field verify all equipment, vehicles, and tools prior to submitting a bid. Offerors shall make their own determination of the adequacy of all equipment, vehicles, and tools.

TABLE 2
Spare Parts
Wastewater System Scott AFB

Qty	Item	Make/Model	Description	Remarks
List of Spare Parts Provided in Technical Library.				

TABLE 3
Specialized Vehicles and Tools
Wastewater System Scott AFB

Description	Quantity	Location	Maker
List of Specialized Tools provided in the Technical Library.			

J4.2.3 Wastewater System Manuals, Drawings, and Records

Table 4 lists the manuals, drawings, and records that will be transferred with the system.

TABLE 4
Manuals, Drawings, and Records
Wastewater System Scott AFB

Qty	Item	Description	Remarks
1 Set	Wastewater Collection System	Installation Map depicting the Wastewater Collection System.	Located in Technical Library.
1 Set	Lift Station Operations Manuals	File containing instructions for O&M of lift stations.	Located in Technical Library.
1 Set	Treatment Plant Operations Manuals	File containing instructions for O&M of WWTP.	Located in Technical Library.
1	EBS	EBS survey was completed during the 1990's for the WWTP area.	Located in Technical Library.

J4.3 Specific Service Requirements

The service requirements for the Scott AFB wastewater system are as defined in the Section C, *Description/Specifications/Work Statement*. The following requirements are specific to the Scott AFB wastewater system and are in addition to those found in Section C. If there is a conflict between requirements described below and Section C, the requirements listed below take precedence over those found in Section C.

- Scott AFB reserves the right to use treated wastewater as needed to fill selected ponds on base at the sole determination of Scott AFB personnel. Divert effluent flow from the WWTP to the Golf Course Pond, or in Scott Lake II whenever directed by the base Contracting Officer or the Contracting Officers designated representative. The percentage of flow requiring diversion may fluctuate from none to 100 percent of WWTP effluent at any time of the year.
- Obtain a new NPDES permit through the Illinois Environmental Protection Agency for all four effluent discharge locations. The Contractor shall be responsible for water

quality within the Golf Course pond and Scott Lake II and at the outfalls as it relates the water discharged to the ponds from the WWTP. Prevent overflows of the ponds caused by excessive pumping of WWTP effluent. Water quality problems caused by overland flow of runoff into the Golf Course Pond and Scott Lake II will be considered a changed condition and cost changes managed according to appropriate contract clauses. Protect the area surrounding Outfall 001 in accordance with all local, state, and Federal regulations governing erosion protection and protection of waters of the State of Illinois.

- Obtain a new Land Application Permit through the Illinois Environmental Protection Agency if this method of sludge disposal is chosen.
- When servicing a building with no preexisting cleanout due to stoppage or other maintenance activity, install a cleanout within 10 feet of the building.

J4.4 Current Service Arrangement

Scott AFB currently provides its own wastewater collection and treatment services, using an on-base treatment system. Wastewater influent is not measured at Scott AFB. Effluent flow in FY2003 was approximately 498,280 kgal, with a peak monthly flow of 54,900 kgal in March 2003 and a minimum monthly flow of 32,000 kgal in December 2002. During 2003, the average daily wastewater discharge was 1,360 kgal per day.

The WWTP currently receives electricity and water supply through the Main Base. Heating requirements are met through propane usage. Electricity and water supply are not individually measured. Propane usage at the WWTP during FY2003 was approximately 12,021 gallons.

The wastewater utility system at Scott AFB is permitted by the Illinois Environmental Protection Agency (Illinois EPA). The Illinois EPA has indicated that the transfer of ownership will require new permit(s) to operate and discharge.

Sludge disposal through land application is currently permitted by Illinois EPA. Once the ownership of the system is transferred, the new owner must submit a new Land Application Permit, if this method of sludge disposal is chosen.

J4.5 Secondary Metering

The contractor shall maintain the flow measurement devices at each outfall.

J4.6 Monthly Submittals

The Contractor shall provide the Government monthly submittals for the following:

1. Invoice (IAW G.2). The Contractor's monthly invoice shall be presented in a format proposed by the Contractor and accepted by the Contracting Officer. Invoices shall be submitted by the 25th of each month for the previous month. Invoices shall be submitted to:

Name: Chief of Resources
Address: 375 CES/CER, 701 Hangar Road, Scott AFB, IL 62225
Phone number: (618) 256-3531

2. Outage Report. The Contractor's monthly outage report (blockage and overflow information) will be prepared in the format proposed by the Contractor and accepted by the Contracting Officer. Outage reports shall be submitted by the 25th of each month for the previous month. Outage reports shall be submitted to:

   Name: Infrastructure Superintendent
   Address: 375 CES/CEOI, 701 Hangar Road, Scott AFB, IL 62225
   Phone number: (618) 256-3298

3. Infiltration and Inflow Report. If required by Paragraph C.3, the Contractor shall submit an Infiltration and Inflow report in a format proposed by the Contractor and accepted by the Contracting Officer. System efficiency reports shall be submitted by the 25th of each month for the previous month. System efficiency reports shall be submitted to:

   Name: Infrastructure Superintendent
   Address: 375 CES/CEOI, 701 Hangar Road, Scott AFB, IL 62225
   Phone number: (618) 256-3298

J4.7 Infiltration and Inflow (I&I) Projects

IAW Paragraph C.3, Utility Service Requirement, the following projects have been implemented by the Government for managing and monitoring I&I.

Scott AFB is currently conducting an Infiltration and Inflow Study. A final report is expected in the summer of 2004 and will be included in the technical library when available.

J4.8 Service Area

IAW Paragraph C.4, Service Area, the service area is defined as all areas within the Scott AFB boundaries.

J4.9 Off-Installation Sites

No off-installation sites are included in the sale of the Scott AFB wastewater system.

J4.10 Specific Transition Requirements

IAW Paragraph C.13, Transition Plan, **Table 5** provides a listing of service connections and disconnections required upon transfer.

TABLE 5
Service Connections and Disconnections
Wastewater System Scott AFB

Location	Description
WWTP	Install electric meters in the line(s) providing electricity to the WWTP at a location agreeable with the system's owner. The meter shall serve as a point of demarcation and allow billing of the commodity. The contractor shall transfer ownership of the installed meter to the electric system's owner. The meter shall be installed to the meet the owner's requirements.
WWTP	Install water meters in the line(s) providing water to the WWTP at a location agreeable with the system's owner. The meter shall serve as a point of demarcation and allow billing of the commodity. The contractor shall transfer ownership of the installed meter to the water system's owner. The meter shall be installed to the meet the owner's requirements.
Lift Stations 551, 857, 1803, 6399, 34408, 3905, 168, 232, 5040, 4015	Install electric meters at the lift stations to serve as a point of demarcation and to allow billing of the commodity. The contractor shall transfer ownership of the installed meters to the electric system's owner. The meters shall be installed to the meet the owner's requirements.

J4.11 Government Recognized System Deficiencies

Table 6 provides a listing of system improvements that the Government has planned. The Government recognizes these improvement projects as representing current deficiencies associated with the Scott AFB wastewater system. If the utility system is sold, the Government will not accomplish these planned improvements. The Contractor shall make a determination as to its actual need to accomplish and the timing of any and all such planned improvements. Capital upgrade projects shall be proposed through the Capital Upgrades and Renewal and Replacement Plan process and will be recovered through Schedule L-3. Renewal and Replacement projects will be recovered through Sub-CLIN AC.

TABLE 6
System Deficiencies
Wastewater System Scott AFB

Project Location	Project Description
WWTP	The WWTP is located in the clear zone for the airfield. Air Force regulations prohibit the renewal and replacement of the existing WWTP structures and equipment. Either a new WWTP must be planned, designed, permitted, and constructed off base or a service agreement made with a local POTW for the future treatment of Scott AFB wastewater. The current WWTP may be operated until a new treatment option is implemented, upon which the existing plant must be demolished and the land incorporated into the clear zone.